

Common Course Outline

CAMM 202

CNC PROGRAMMING

3 Semester Hours

The Community College of Baltimore County

Description

CNC Programming

Discusses computer operations and the commands necessary to use a PC for programming, editing, storing, and retrieving programs for CNC machines; covers the 3D mill, surfaces, solids, and job set-up for surface machining and advanced lathe programming using the C and Y axes.

Prerequisite: CAMM 101, CAMM 111, and CAMM 201

Overall Course Objectives

Upon completion of this course the student will be able to:

1. Describe and use basic windows commands.
2. Use a CAM software package to edit G codes.
3. Import and Export CAD files, Solids, and surfacing formats.
4. Describe basic Solid and surfacing types.
5. Create surfaces.
6. Edit surface and solid geometry to correct tool-paths.
7. Use the communication software to transfer large G-code files to a CNC machine.

Major Topics

- I. Introduction to Operating System
 - A. Differences between editors for NC and CNC
 - B. Setting up file locations and retrieving files
 - C. File extensions and surfaces
- II. CAM Systems
 - A. 2D and 3D programs
 - B. Contour and pocketing routines for 3D surface programs
- III. Creating Tool-Paths and Working with Assorted CNC Machines
 - A. Using the CAM system with various CNC machines
 - B. Using libraries of parts
 - C. Using a rotary axis and lathe live tooling.

- IV. Programming for Live Tooling and 3D Milling
 - A. Using the C and Y axes
 - B. Lead and lag turning
 - C. Adding operation and function
 - D. Setting-up 3D mill fixtures and other holding solutions

Course Requirements

Grading: the faculty member will determine grading procedures, and a student can expect a minimum of eight grades from at least four of the following categories:

1. Quizzes
2. Lab projects
3. Written paper
4. Homework assignments
5. Midterm exam
6. Class participation
7. Comprehensive final.

Other Course Information

This course is taught in a computerized environment.

Date Revised: 6/1/00